



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/826,179   | 04/16/2004  | Mi Jung Yang         | 5895P056            | 9770             |
| 8791 7590 04/16/2008<br>BLAKELY SOKOLOFF TAYLOR & ZAFMAN<br>1279 OAKMEAD PARKWAY<br>SUNNYVALE, CA 94085-4040 |             |                      |                     |                  |
| EXAMINER   |             |                      |                     |                  |
| MAHMOUDZADEH, NIMA   |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
| 2619   |             |                      |                     |                  |
| MAIL DATE  |             | DELIVERY MODE        |                     |                  |
| 04/16/2008   |             | PAPER                |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/826,179

**Applicant(s)**

YANG ET AL.

**Examiner**

NIMA MAHMOUDZADEH

**Art Unit**

2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8 and 9 is/are rejected.
- 7) ☒ Claim(s) 7 and 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

Applicant's amendment filed January 22, 2008 has been entered. Claims 1-10 are still pending in this application, with claim 1 being independent.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al. (US Patent Publication 2003/0028641).

**Regarding claim 1**, Zhang et al. teach a method of performing adaptive connection admission control in consideration of input call states in a Differentiated Services (DiffServ) network, the DiffServ network including a bandwidth broker, a plurality of ingress and egress edge nodes and a plurality of core nodes, the method comprising the steps of:

a) a corresponding ingress edge (Fig. 1, 14) node performing connection admission control (Paragraph [0030], utilizing dynamic bandwidth allocation mechanism) for a new connection within an amount of bandwidth initially allocated to each of paths between the ingress and egress edge nodes (Paragraph [0030], lines 8-

11, the bandwidth for each link of the network is divided into discrete amounts of bandwidth);

b) comparing an amount of remaining bandwidth allocated to a specific path  $P_r$  with an amount of bandwidth required for a call requesting new connection setup input to the corresponding ingress edge node (Paragraph [0033], lines 3-9), and calculating an amount (See paragraph [0042] and also paragraph [0043] the bandwidth broker is going to recalculate the amount of bandwidth for the link and determines if the amount is sufficient. Also see paragraph [0035], lines 15 and 16) of additional bandwidth to be requested from the bandwidth broker when the amount of the remaining bandwidth does not satisfy the amount of the bandwidth required for the connection setup requesting call (Paragraph [0033], lines 9-13); and

c) requesting additional bandwidth from the bandwidth broker on the basis of the calculated amount (See paragraph [0042] and also paragraph [0043] the bandwidth broker is going to recalculate the amount of bandwidth for the link and determines if the amount is sufficient. Also see paragraph [0035], lines 15 and 16) of the additional bandwidth, changing bandwidth information of the corresponding path  $P_r$ , and performing connection admission control (Paragraph [0035]).

**Regarding claim 2**, Zhang et al. teach the adaptive connection admission control method according to claim 1, further comprising the step of d) decreasing the amount of additionally allocated bandwidth when the amount of the additionally allocated bandwidth is not exhausted within a certain range, and returning the

decreased amount of the additionally allocated bandwidth to the bandwidth broker (Paragraph [0041]).

**Regarding claim 3**, Zhang et al. teach the adaptive connection admission control method according to claim 2, wherein the step d) comprises the steps of:

comparing an amount of bandwidth  $UBW_{sub.i}$  being used at current time  $T_{sub.i}$  of the amount of the additionally allocated bandwidth with an amount of bandwidth  $UBW_{sub.i-1}$  actually used at previous time  $T_{sub.i-1}$  (Paragraph [0044] and Fig. 5); and

decreasing an amount of currently available bandwidth  $BW_{sub.i}$  of the corresponding path  $P_r$  when a difference between the amount of the bandwidth  $UBW_{sub.i}$  and the amount of the bandwidth  $UBW_{sub.i-1}$  is equal to or greater than a preset threshold (When bandwidth  $I$  is greater than bandwidth  $I-1$ , the path is not characterized as critical. Paragraph [0044] and Fig. 5).

**Regarding claim 4**, Zhang et al. teach the adaptive connection admission control method according to claim 3, wherein the amount of the currently available bandwidth  $BW_{sub.i}$  of the corresponding path  $P_r$  is decreased to the amount of the bandwidth  $UBW_{sub.i-1}$  actually used at the previous time  $T_{sub.i-1}$  (Paragraph [0044] and Fig. 5).

**Regarding claim 5**, Zhang et al. teach the adaptive connection admission control method according to claim 2, further comprising the step of the bandwidth broker withdrawing the decreased amount of the additionally allocated bandwidth and allocating the decreased amount of the additionally allocated bandwidth to another path

(The decreased amount of bandwidth is going to be distributed within all other paths which were taken from initially. Paragraph [0044] and Fig. 5).

**Regarding claim 6,** Zhang et al. teach the adaptive connection admission control method according to claim 1, wherein the step a) comprises the steps of:

determining each of paths between the ingress and egress edge nodes within the DiffServ network using a routing protocol (It is inherent that DiffServ operates on the principle of traffic classification which is taught by Zhang et al., where each data packet is placed into a limited number of traffic classes, rather than differentiating network traffic based on the requirements of an individual flow);

the bandwidth broker determining an amount of initial bandwidth for each path and reporting the determined amount of the initial bandwidth for each path to the ingress edge node (Paragraph [0008]);

selecting the path  $P_r$  using a destination address when the call requesting new connection setup is input to the ingress edge node (It is inherent that layer 3 devices use IP address/ routing table in order to perform routing. Paragraph [0035]); and

accepting the connection setup request when the amount of the remaining bandwidth, which is allocated to the selected path  $P_r$  and is currently available, is greater than the amount of the bandwidth required for the connection setup requesting call (Paragraph [0044]).

**Regarding claim 8,** Zhang et al. teach the adaptive connection admission control method according to claim 1, wherein the step b) is performed so that, when the amount of the remaining bandwidth satisfies the amount of the bandwidth required for the connection setup requesting call, the bandwidth information of the corresponding path Pr is changed as expressed in the following Equation (Paragraph [0039] and [0041]):

Changed bandwidth information of Pr = amount of remaining bandwidth of Pr - amount of bandwidth required for new call (Paragraph [0041]).

**Regarding claim 9.** Zhang et al. teach the adaptive connection admission control method according to claim 1, wherein the step c) comprises the steps of:

the ingress edge node requesting the bandwidth broker to allocate the additional bandwidth predicted depending on the state of the input call (Paragraph [0036]);

the bandwidth broker receiving the request, determining whether to accept the request for the allocation of the additional bandwidth depending on states of links through which the corresponding path Pr passes (Paragraphs [0036] and [0037]);

the ingress edge node receiving a response to the request for the allocation of the additional bandwidth from the bandwidth broker and determining whether allocation of the additional bandwidth succeeds ([0008], Fig. 7); and

rejecting the connection setup request if the allocation of the additional bandwidth fails, while changing the bandwidth information of the corresponding path Pr

and accepting the connection setup request if the allocation of the additional bandwidth succeeds (Paragraphs [0048] and [0049]).

### ***Allowable Subject Matter***

Claims 7 and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

Applicant's arguments filed January 22, 2008 have been fully considered but they are not persuasive.

On page 9 of the Applicant's response, Applicant argued that Zhang et al. (herein after Zhang) do not disclose "calculates an amount of additional bandwidth to be requested from the bandwidth broker when the amount of the remaining bandwidth does not satisfy the amount required" of claim 1 and cites that [0034]. However, the Examiner respectfully disagrees and redirects Applicant to paragraph [0042] and also paragraph [0043] where the bandwidth broker recalculates the amount of bandwidth for the link and for additional bandwidth where the requirement is not satisfied, determines if the amount is sufficient. Also see paragraph [0035], lines 15 and 16.

### ***Conclusion***



**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **NIMA MAHMOUDZADEH** whose telephone number is (571)270-3527. The examiner can normally be reached on Monday - Friday, 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chirag G. Shah can be reached on (571) 272-3144. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2619

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NIMA MAHMOUDZADEH/  
Examiner, Art Unit 2619

**/Chirag G Shah/  
Supervisory Patent Examiner, Art Unit 2619**